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New or notable species of Amaranthus*

PAUL C. STANDLEY

The two new species of *Amaranthus* described below were detected by the author while revising this genus for the North American Flora. It was scarcely to have been expected that many undescribed species would be discovered in this group, most of whose members are widely distributed weeds of waste or cultivated ground. Some of the West American species, however, are restricted locally to rocky canyons, gravelly mesas, and sandy beaches; it is to this group that the two new species belong. There are included here notes upon some of the earlier species which have not been well understood. The distribution of *Amaranthus retroflexus* is also discussed.

Amaranthus Watsoni Standley sp. nov.

Amaranthus Torreyi suffruticosus Uline & Bray, Bot. Gaz. 19: 272. 1894.

Stems stout or slender, 1.5 to 10 dm. high, erect or ascending, branched, obtusely angled, glandular-puberulent or short-villous, densely glandular above; petioles slender or stout, 0.5–6.5 cm. long; leaf blades rhombic-oval to rounded-ovate or oblong, 1–8 cm. long, obtuse to truncate at the apex and usually emarginate or even deeply retuse, acutish or rounded at the base, sometimes slightly decurrent, rather thick, deep green or yellowish green, glandular-puberulent, at least beneath, often densely so on both surfaces; flowers dioecious, in axillary clusters, especially in the pistillate plants, and in terminal, often paniculate, erect or drooping spikes, these 4–16 cm. long and 6–14 mm. in diameter; bracts lanceolate, longer than the flowers, attenuate to the subulate tips, glandular-puberulent; sepals of the staminate flowers 3–4 mm. long, oblong, obtuse or acutish, 1-nerved, the nerve excurrent; sepals of the pistillate flowers slightly united at the base, broadly spatulate, 2.5 mm. long, broadly rounded at the apex, usually emarginate, 1-nerved, the nerve sometimes excurrent in the outer sepals; stamens 5; style branches 2; capsule subglobose, circumscissile; seeds dark reddish brown, 0.6 mm. in diameter, rotund.

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Type in the U. S. National Herbarium, *692084*, collected in the vicinity of Guaymas, Sonora, Mexico, in 1887, by Dr. Edward Palmer (*312*).

This sheet consists of pistillate specimens. As typical of the staminate plant may be taken sheet *no. 692083*, collected at the same locality in the same year by Dr. Palmer, under his number *675*. Additional specimens examined. SONORA: Guaymas, 1887, *Palmer 676*. LOWER CALIFORNIA: La Paz, near sea level, February 17, 1906, *Nelson & Goldman 7532;* between Santo Domingo and Matancita, alt. 15 to 30 meters, November 14–15, 1905, *Nelson & Goldman 7282;* Cape St. Lucas, *Xantus 100*.

The proposed species is related to *Amaranthus Palmeri* S. Wats., and the type collection was determined by Dr. Watson as that species. It is readily distinguished by its glandular pubescence, relatively broader, very obtuse, emarginate leaves, and shorter bracts. The staminate spikes, too, are less dense and usually considerably thicker. Both species were collected by Dr. Palmer at Guaymas, and it is possible that in some cases they were distributed under the same number.

Amaranthus Torreyi suffruticosus is doubtless to be placed here, although the specimens are so old and fragmentary that they do not represent the species well. It would be unfortunate to retain the name *suffruticosus*, since the plant is as truly herbaceous as all the other North American members of the genus.

Amaranthus myrianthus Standley sp. nov.

Stems prostrate or ascending, 3–10 dm. long, much branched, stout, succulent, glabrous or sparsely villous; petioles stout, 4–15 mm. long; leaf blades rounded-oval to oval or nearly orbicular, 6–20 mm. long, 5–15 mm. wide, rounded or emarginate at the apex, rounded to cuneate at the base, thick and firm, very conspicuously veined, villous beneath, at least when young; inflorescence dioecious, of numerous paniculate many-flowered spikes, these dense or sometimes interrupted below, 6–40 cm. long and 1–2 cm. thick in the pistillate plants, the spikes of the staminate plants shorter, somewhat interrupted, few-flowered, 7 mm. or less in diameter; bracts 2 or 3 at the base of each flower, ovate or broadly ovate, acute, sometimes pungent-tipped, usually half as long as the sepals but sometimes nearly equaling them; sepals of the staminate flowers oblong to oval, 2.5 mm. long, obtuse, apiculate, thin and scarious except along the single green nerve; sepals of the pistillate flowers 2 mm. long, spatulate, or narrowly oblong and narrowed toward the base, broadly obtuse to acutish, glabrous, rather thick and firm, much thickened and united at the base, the midnerve usually excurrent; stamens 5; style branches 3, slender, elongate, divaricate; utricle obovoid, about equaling the sepals, thin-walled, nearly smooth, circumscissile; seed rotund, black and shining, about 1 mm. in diameter.

Type in the U. S. National Herbarium, *463205*, collected in the vicinity of La Barra, 8 kilometers east of Tampico, Tamaulipas, Mexico, at sea level, February 1–8, 1910, by Dr. Edward Palmer (*266*). Additional material of the same collection is mounted on sheet *463206*.

In general appearance this is similar to *Amaranthus Greggii* S. Wats., a species with indehiscent fruit. The form of the fruit and bracts would suggest a relationship with *A. Torreyi*, but that has erect stems, narrower leaves, larger flowers, and narrow bracts, while the form of the inflorescence is very unlike in the two species.

AMARANTHUS GREGGII S. Wats. Proc. Amer. Acad. **12**: 274. 1877

Watson based this species upon specimens collected by Gregg in Mexico, at the mouth of the Rio Grande, in 1848 or 1849. Uline and Bray * in their monograph of the North American species of *Amaranthus* say: "The fact that but one locality has ever been reported, and that only the pistillate flowers and the upper part of the plant are in existence, places this species on a rather perilous footing." Mr. G. L. Fisher, however, has recollected the plant recently at Galveston, Texas. On September 8, 1912, he gathered pistillate specimens along the beach at Galveston (*102*), and on September 1, 1913 he revisited the locality, securing both staminate and pistillate plants (*605*, *612*). His specimens agree very well with the type in the Gray Herbarium, which the writer has examined through the courtesy of Dr. B. L. Robinson. Mr. Fisher states that the plant is abundant on sand along the Gulf shore about 400 feet from water. The new locality represents a considerable extension of range for this species which no doubt will be found at intervening points along the Texan coast.

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* Bot. Gaz. **19**: 271. 1894.

The species is very distinct, differing from most of its relatives in its tough-walled, indehiscent fruit. The branches are nearly a meter long or shorter, succulent, sparingly branched, and procumbent or ascending. Watson described the pistillate sepals as acute, but in both the type and the Texan specimens the inner ones are rounded or obtuse, while the outer ones are acute, or frequently obtuse.

AMARANTHUS BRACTEOSUS Uline & Bray, Bot. Gaz. **19**: 314. 1894
Amaranthus viscidulus Greene, Pittonia **3**: 344. 1898.

The type of *A. bracteosus* (in the Gray Herbarium) was collected by Fendler (*735*), probably near Santa Fe, New Mexico. *Amaranthus viscidulus* was based upon Wooton's *300* from the White Mountains, New Mexico, the specimens having been collected at Gilmore's Ranch on Eagle Creek. Upon a superficial examination the two appear distinct, but more careful comparison has convinced the writer that they are the same species. The type of *A. bracteosus* appears to be a plant grown in wet soil, for it is very stout and has large leaves, while very little pubescence is present. The type of *A. viscidulus* is a smaller plant with a more slender stem, smaller leaves, and abundant viscid-villous pubescence. Both are very unlike any other American species. They agree perfectly in the peculiar form of the bracts and fruit, and in having the petioles longer than the leaf blades. These differences are probably correlated with habitat. A greater amount of moisture would be expected to produce a larger, less pubescent plant like *A. bracteosus.* No specimens corresponding to Fendler's plant have been collected recently in New Mexico, although several botanists have worked in the region from which it came. On the other hand, *Amaranthus viscidulus* has been collected several times, not only in the White Mountains but at Pecos (*Standley 5149*), a locality not far distant from Santa Fe. Fendler visited Pecos at least twice and it may be that he collected the type of *A. bracteosus* there.

In a recent treatment of the genus *Amaranthus*, Dr. Thellung* has confused this with *A. pubescens* (Uline & Bray) Rydb., adopting the name *viscidulus* and citing *pubescens* as a synonym. His description applies wholly to the latter species. *Amaranthus*

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* In Asch. & Graebn. Syn. Fl. Mitt. Eur. **5**: 289. 1914.

viscidulus is readily separated by its larger, rounded leaves, longer bracts, spicate rather than axillary inflorescence, and 5 instead of 3 sepals in the pistillate flowers.

In their original description of *A. viscidulus*, Uline and Bray cite also a cultivated specimen in the National Herbarium. This appears to be nothing more than a somewhat abnormal form of *A. hybridus*.

AMARANTHUS ACUTILOBUS Uline & Bray, Bot. Gaz. **19**: 320. 1894

Euxolus emarginatus A. Br. & Bouché, Ind. Sem. Hort. Berol. 1851; Linnaea **25**: 297. 1853. Not *Amaranthus emarginatus* Salzm.; Uline & Bray, 1894.

This was originally described as having come from Mexico. The authors do not cite the name of the collector, and it is probable that the description was based upon cultivated plants grown from seeds believed to have come from Mexico. In the herbarium of the Missouri Botanical Garden is a specimen collected by A. Braun in 1857, in the Royal Botanical Garden at Berlin, where it is said to have escaped ("verwildert") from cultivation. No other collection than the original one has ever been reported from Mexico. Thellung* reports the species as adventive in Germany at Berlin, Dresden, and Mannheim, and in Austria at Vienna and Prague.

Recently, while examining the *Amaranthus* material in the herbarium of the Missouri Botanical Garden, the writer found four sheets of a species which at first was not recognized. Upon examining the flowers it was soon apparent that the plants were *Amaranthus acutilobus*, although in general appearance they were unlike cultivated specimens of that species, having longer, less fleshy, more slender stems and smaller leaves. All four sheets are from southern Italy, one having been collected at Naples in 1871 or 1872, and three at Gioja, Calabria, in 1871 and 1872. Upon one of the sheets from Gioja is a specimen of *Amaranthus crassipes* Schlecht., a species known only from the West Indies and peninsular Florida. This indicates that the material was carelessly prepared, for it is not probable that this species has been introduced in Italy. The occurrence of *A. acutilobus* in Italy is of great interest, for it suggests a possibility that the species may be a native of that region rather than of Mexico. Until the plant is re-collected in the latter country, its occurrence there must remain very doubtful.

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* In Asch. & Graebn. Syn. Fl. Mitt. Eur. 5: 282. 1914.

The name *acutilobus* adopted by Uline and Bray in renaming this species is an inappropriate one, for the lobes of the leaves are not acute but rounded or obtuse.

AMARANTHUS RETROFLEXUS L.

In practically every manual of North American botany the statement is made that this species has been introduced into the United States from tropical America. The writer has seen a large series of specimens of the plant from North America and from the Old World, but he has seen none from Mexico or Central America. Probably it does reach northern Chihuahua and Sonora, since it is found in New Mexico and Arizona not far from the Mexican border. The species is not known to occur in South America.

Linnaeus based his description upon plants said to come from Pennsylvania. It is probable that the species is a native of the southeastern part of the United States. It is apparently most abundant in the east, although it is found throughout the United States and in southern Canada. In the west it grows usually in localities where it might easily have been naturalized, but the same may be said of its occurrence in the east. *Amaranthus retroflexus* is now thoroughly established in many parts of Europe, Asia, and Africa.

WASHINGTON, D. C.